REMARKS

The Office Action of August 6, 2004 has been carefully reviewed and this response addresses the concerns set forth in the Office Action. Claims 1-9 are pending in the application.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter Applicant regards as the invention. Claim 2, as herein amended, addresses this concern.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spott (DE 32 33 557) in view of Howe (US Patent # 3,682,186). This rejection is respectfully traversed.

Spott describes a reactor in which the reaction mixture is used to drive a scraper pig through the reactor to prevent the build up of deposits. Although the reactor described in Spott is a loop, it is clearly not a "loop reactor" which recycles the reactor charge while fresh raw materials are added and overflowing product is collected. Instead, the reactor charge in Spott is discharged by gravity through tube 65 from vessel 59 while the pigs are separated from the reactor charge being discharged by the slanted mesh grid 60 and tube 62 is just a pig return line which does not contain any reaction charge. Thus, the reactor charge in Spott does not loop around as it would in a true loop reactor. In fact, the reaction product is not and cannot be recirculated, making the reactor of Spott unsuitable for the continuous polymerization disclosed in the present application.

Further, as admitted in the office action, Spott does not teach, suggest or disclose a by-pass line or a pig receiving station. Instead, the pig(s) are returned to the suction inlet of circulation pump 52 via gravity through tube 62, tube bend 63, and tube 64. New reaction solution is added to tube 63 (which contains the pigs, but none of the reaction charge) through valve 51 and the suction inlet of

pump 52 moves both the new reaction solution and the pigs through the pump 52 and into the reactor 56.

Howe describes a by-pass system for pipeline operations in which a pig may be automatically passed by a booster station without disturbing the operation of the booster station and while the position of the pig, with respect to the flowing stream of liquids or gasses is precisely maintained. Howe also does not describe a "loop reactor" for continuous polymerization as disclosed in the present application. In fact, the Howe apparatus is not even a reactor, but instead is a long transport line that contains booster stations to keep the flow rate of the liquid or gas being transported at a certain level. No emulsion polymerization takes place and there are no monomer inlets or emulsion discharge outlets. One skilled in the art would not be motivated to take the non-loop emulsion polymerization reactor taught in Spott and combine it with the teachings of Howe, relating to long distance transport lines, especially when trying to employ a pig to clean a continuous loop reactor that requires a way for the pig to be removed, replaced or halted without shutting down the polymerization process or disturbing the flow of the reaction medium.

In arguendo, even if one skilled in the art were motivated to combine these teachings, it would not result in the present invention. It is asserted in the office action that station by-pass interchange 9 is a "pig receiving station" that is integrated into the by-pass tube. Applicant respectfully disagrees. As can be clearly understood from Howe, the pigs are not stationed in the by-pass interchange 9, but merely pass through it without stopping. The pigs are not and cannot be taken out from the by-pass interchange 9. In fact, one of the advantages asserted by Howe is that the pigs (or displacers) are maintained in their same position with respect to the flowing stream of liquids or gasses. This would necessarily mean that the pigs or displacers are not stationed in or removed from the by-pass interchange 9.

Thus, for the reasons set forth above, the present invention is non-obvious over the cited references and the Applicant respectfully requests that the Examiner find the present application in condition for immediate allowance.

Respectfully submitted,
DAVID CHARLES ADAMS ET AL

Michelle J. Burke
Attorney for Applicants
Registration No.: 37,791

Akzo Nobel Inc.
Intellectual Property Dept.
7 Livingstone Avenue
Dobbs Ferry, NY 10522-3408
(914) 674-5459